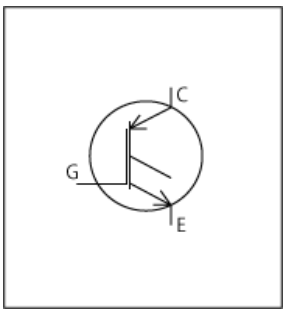
LTspice Model
Nch IGBT
Infineon
IKW40N65H5



Model Information

Model	An original macro model based on BSIM3 and Gummel-Poon model	
Call Name	MDC_IKW40N65H5_LT	
Pin Assign	1:G 2:C 3:E	
File List	Model Library	MDC_IKW40N65H5_LT01.lib
	Model Report	MDC_IKW40N65H5_LT.pdf (this file)
Verified Simulator Version		LTspice version XVII
Note		

References

The information which was used for modeling is as follow:

[Data Sheet]

- ●Date/Version: Rev.2.1
- ●Product name: IKW40N65H5
- ●Company name: Infineon Technologies AG
- ●Characteristics: IcVce[Vge],IcVge[Temp],Vce(sat)Temp[Ic],VthTemp[Ic],Vge Qg[Vcc],Cres,Coes,Cies,IfVf[Temp],tdon,tr,tdoff,tf,Transient

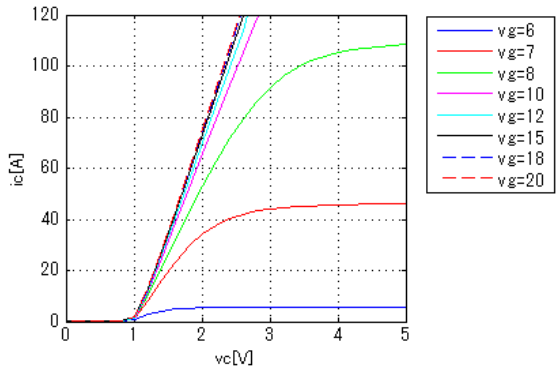
Simulation Range

This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

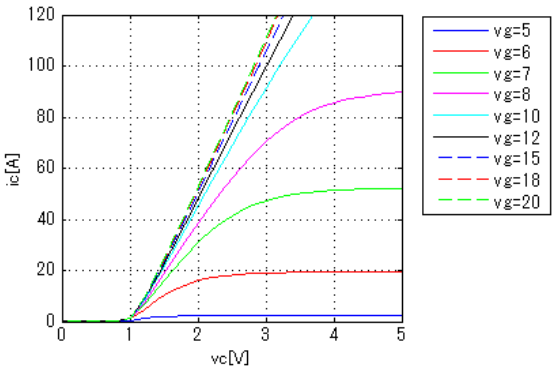
Item	Range			Unit
	Min.		Max.	
Collector-emitter voltage (DC)	0	to	650	V
Gate-emitter voltage (DC)	0	to	30	V
Temperature	-55	to	150	deg C

Simulation results are following.
Explanatory notes — : simulated

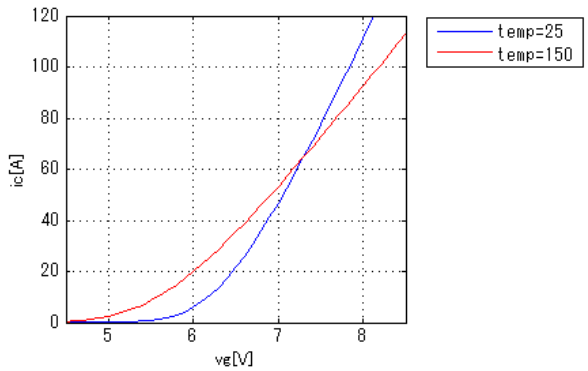
IcVce[Vge]
Temp. = 25deg C



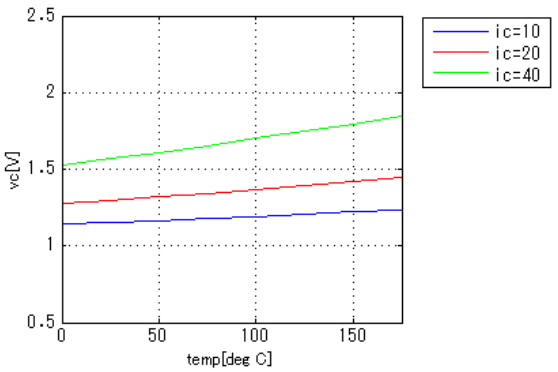
IcVce[Vge]
Temp. = 150deg C



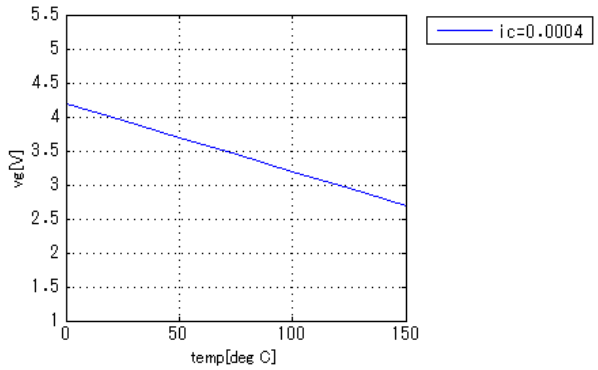
IcVge[Temp]
Vce = 20V



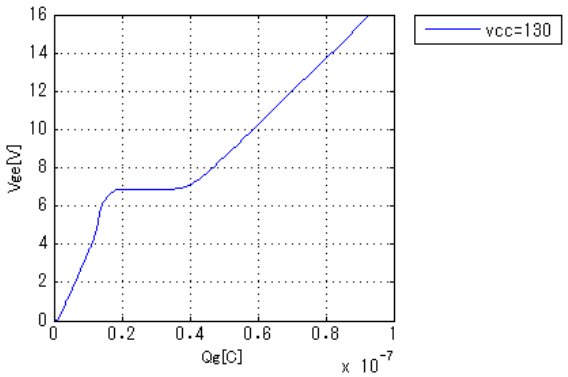
Vce(sat)Temp[Ic]
Vge = 15V



VthTemp[Ic]



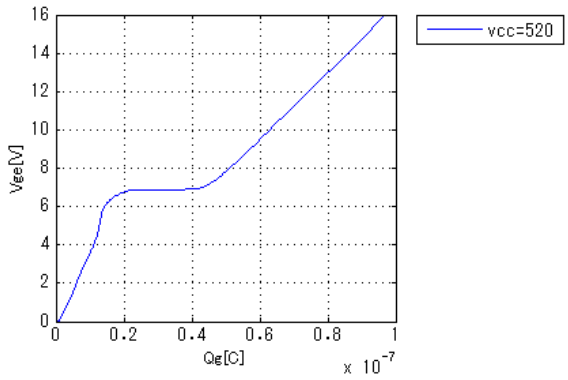
VgeQg[Vcc]
Ic = 40A



Simulation results are following.
Explanatory notes — : simulated

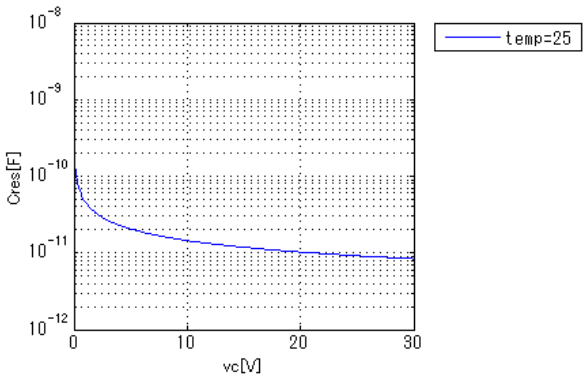
VgeQg[Vcc]

Ic = 40A



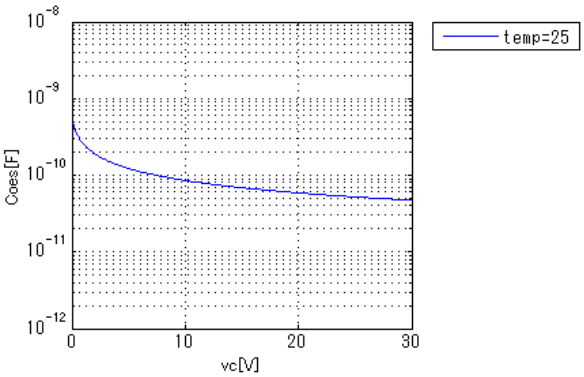
Cres

Freq. = 1MHz



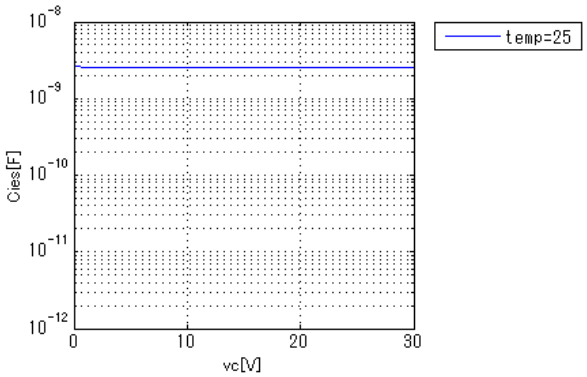
Coes

Freq. = 1MHz

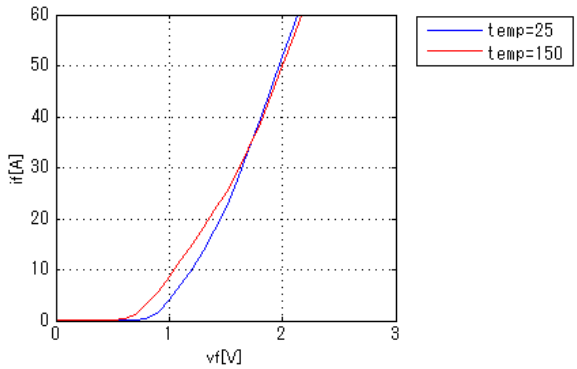


Cies

Freq. = 1MHz

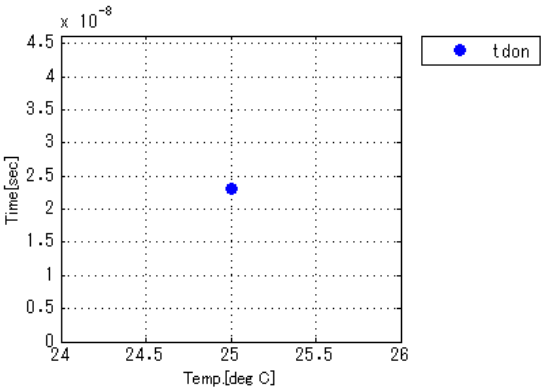


IfVf[Temp]



tdon

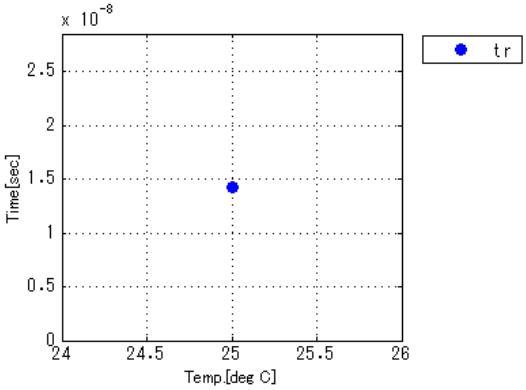
Vcc = 400V, Ic = 20A, +Vg = 15V, -Vg = 0V,
Rg = 15.0ohm, L = 100uH



Simulation results are following.
Explanatory notes — : simulated

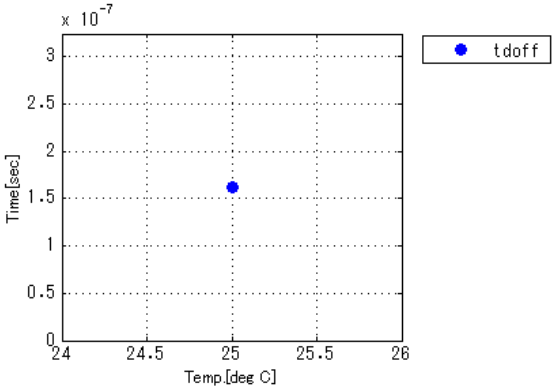
tr

Vcc = 400V, Ic = 20A, +Vg = 15V, -Vg = 0V,
Rg = 15.0ohm, L = 100uH



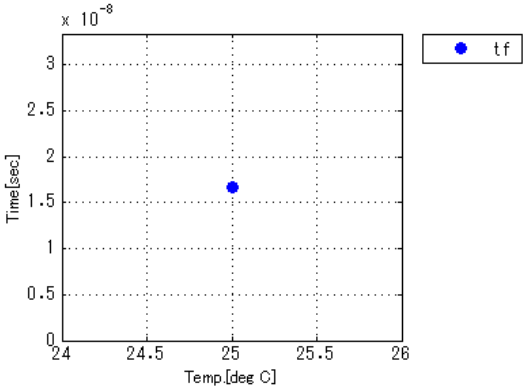
tdoff

Vcc = 400V, Ic = 20A, +Vg = 15V, -Vg = 0V,
Rg = 15.0ohm, L = 100uH



tf

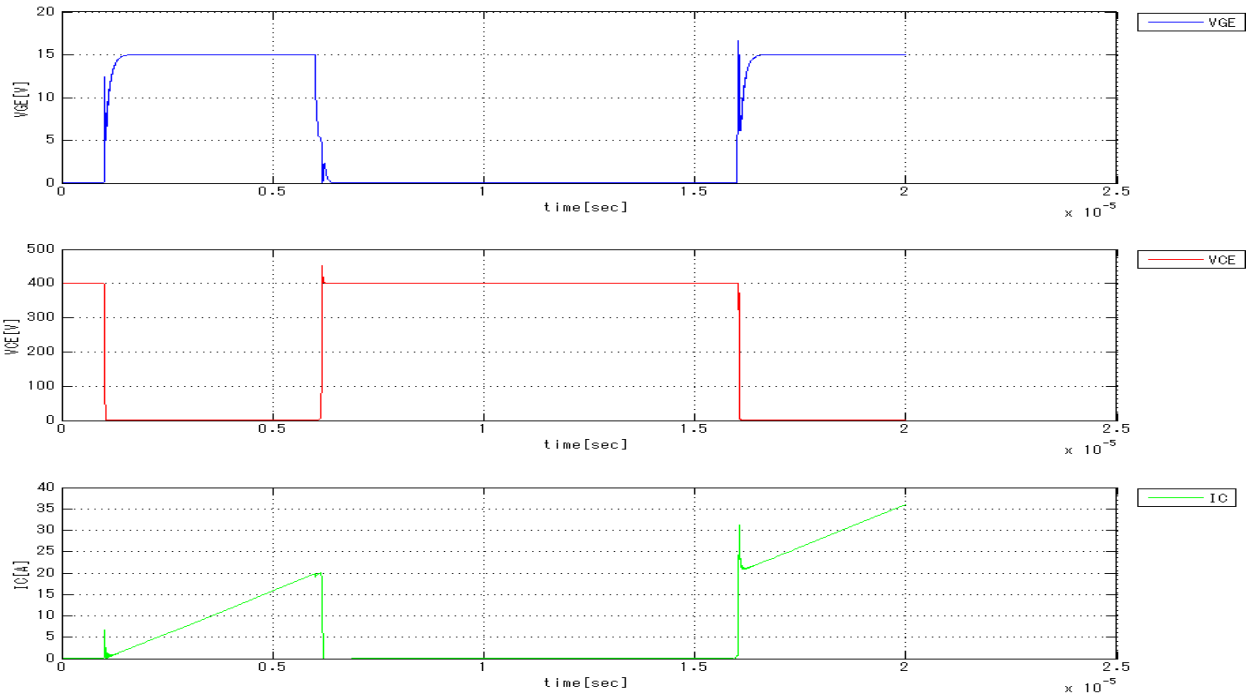
Vcc = 400V, Ic = 20A, +Vg = 15V, -Vg = 0V,
Rg = 15.0ohm, L = 100uH



Simulation results are following.
Explanatory notes — : simulated

Transient

Vcc = 400V, Ic = 20A, +Vg = 15V, -Vg = 0V, Rg = 15.0ohm, L = 100uH



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